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A revision of the Afrotropical genus *Prytanomyia* Özdikmen, 2006 (Asilidae, Laphriinae)

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Abstract

The monotypic Afrotropical genus *Prytanomyia* Özdikmen, 2006 is revised. *Laphystia kochi* Lindner, 1973 is found to belong to *Prytanomyia* and is identical to *Prytanomyia albida* (Oldroyd, 1974), type of the genus. As a consequence *L. kochi* is newly combined with *Prytanomyia*, and *P. albida* is placed in the synonymy of *P. kochi*. The species inhabits arid environments, is restricted to the Namib desert from southern Angola to southern Namibia, and is found on vegetated sand mounds and dunes and in dry riverbeds. The highly reduced pulvilli, characteristic of this species, are believed to be an adaptation to living and perching on sandy surfaces.

Keywords

Assassin Fly, Robber Fly, Taxonomy, Namib Desert

Introduction

During preliminary research on the Afrotropical asilid genus *Laphyctis* Loew, 1879, to which previously described Afrotropical *Laphystia* Loew, 1847 species have been assigned (Londt 1988), and identifying newly collected material of *Prytanomyia* Özdikmen,

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2006 and *Laphyctis* collected in Namibia by the junior author in 2012, it was discovered that *Laphystia kochi* Lindner, 1973 and *Prytanomyia albida* (Oldroyd, 1974) are one and the same species. This discovery prompted this fresh look at *Prytanomyia*.

Prytanomyia is an interesting monotypic genus of small, desert-adapted Afrotropical Asilidae known mainly from coastal sand mounds and dunes and similar habitats along the western coast of southern Africa. Oldroyd (1974) noted its close affiliation with flies now recognized as *Laphyctis*, a poorly understood Afrotropical genus with similarities to the more ubiquitous *Laphystia* Loew, 1847, described from the Palaearctic Region, but now also recorded from the Nearctic, Neotropical and Oriental Regions (Geller-Grimm 2004). The brief taxonomic history of *Prytanomyia* can be summarized as follows:

Lindner (1973) – Described two rather different species of *Laphystia* (*L. kochi* and *L. orichalcea*) from Swakopmund and Gobabeb in the then South West Africa (now Namibia). He had collected the material in 1970 and Harold Oldroyd had identified it as belonging to two undescribed species of *Laphystia*.

Oldroyd (1974) – Published the description of *Prytania albida*, a new genus and species which he believed to be closely related to *Laphystia*. His material, from South West Africa and Angola, had been collected in 1972 by a British Museum expedition to southern Africa.

Oldroyd (1980) – Catalogued the Afrotropical asilid fauna, including his *Prytania albida*. Although Lindner's (1973) publication is listed in the bibliography, and other species described in it were catalogued, Oldroyd inexplicably neglected to catalogue Lindner's two species of *Laphystia*.

Londt (1988) – Discussed the Afrotropical genera of Laphriinae, and in particular the status of Loew's genera, *Laphystia* and *Laphyctis*. In so doing he reinstated *Laphyctis* as valid, in an Afrotropical context (no Afrotropical species of *Laphystia* being recognised).

Özdikmen (2006) – Reported that Oldroyd's *Prytania* was a junior homonym of the genus *Prytania* Debauche, 1938 (Lepidoptera: Erebidae: Arctiinae) and provided a replacement name - *Prytanomyia*.

Materials and methods

Terminology follows that proposed by McAlpine (1981), Cumming and Wood (in press), Stuckenberg (1999), Wootton and Ennos (1989, wing venation) as well as that used by the senior author in more recent publications. Specimens available for study are housed in the following institutions: personal collection of Fritz Geller-Grimm, Frankfurt, Germany (COGG), Illinois Natural History Survey, Urbana-Champaign, IL, U.S.A. (INHS); The Natural History Museum, London, U.K. (BMNH); Kwa-Zulu-Natal Museum, Pietermaritzburg, South Africa (NMSA); Staatliches Museum für Naturkunde, Stuttgart, Germany (SMNS); National Museum of Natural History, Washington, DC, U.S.A. (USNM). When possible, label data is cited as it appears on labels; inverted commas indicate separate labels while lines of data may be separated by

a slash (/). While more recently collected specimens are often provided with detailed information relating to locality and habitat, it has been necessary to attempt to establish precise geographic coordinates for older or relatively poorly documented material in order to gain a better appreciation of distribution. Google Earth and the Internet have been used to accomplish this. Information not appearing on labels is provided in square brackets. A wing was removed, placed in alcohol and flattened between glass microscope slides for photography before being reunited with the specimen. Terminalia were excised and macerated in hot Potassium Hydroxide (KOH) before being drawn with the aid of a drawing tube. The terminalia were then stored in a micro-vial containing a mixture of ethanol and glycerine and attached to the specimen's pin. The majority of photographs of pinned specimens are available in digital format at Morphbank (Collection ID #860905). The distribution map is available in digital format at SimpleMappr and Google Earth.

Data resources

GBIF: specimen occurrence data-set – ead8d850-fc78-4531-9039-48ae8200b4e2 – doi: 10.15468/rufrte. Morphbank: image collection ID – 860905. SimpleMappr: distribution map – 7675 (as in Fig. 17) – Google Earth KML file 7675.

Results

Taxonomy

Prytanomyia Özdikmen, 2006

http://zoobank.org/B04F8319-D404-4A3C-9014-A78599F8BB47

Prytanomyia Özdikmen, 2006: 95. Replacement name for *Prytania* Oldroyd, 1974. Preoccupied by *Prytania* Debauche, 1938 (Debauche 1938, Lepidoptera: Erebidae: Arctiinae).

Prytania Oldroyd, 1974: 112 (fig. 105, whole specimen and detail of ♂ terminalia). Type species. *Prytania albida* Oldroyd, 1974, by original designation. http://zoobank.org/566BE21C-A223-4EE5-AE36-DA78E54BE5FE

Generic diagnosis. This diagnosis is based in part on the key characters used by Londt & Dikow (in press) to differentiate genera in the *Manual of Afrotropical Diptera*. *Head*: Antennal stylus without long setulae; frons approximately the same width at level of antennal insertion and vertex; mystax composed of many setae, none clearly differentiated as macrosetae; compound eye more or less oval in lateral view; anterior tentorial pits small, slit-like, inconspicuous ventrally. *Thorax*: Prosternum fused to proepisternum; scutellum with apical macrosetae. *Legs*: Prothoracic tibia without any spine-like tibial processes; pulvilli poorly developed (approximately ½ length of

claws). *Wing*: Vein C extends around wing margin as far as fused CuA and CuP vein, cup and alula well developed; R_{2+3} ending in C, cell r_1 thus open on wing margin; cell m_3 closed. *Abdomen*: T2 wider than long; S1 confined beneath T1; male terminalia rotated through *c.* 15–45°; female terminalia simple (T10 never divided and without acanthophorite spines).

***Prytanomyia kochi* (Lindner, 1973), comb. n.**
Figs 1–17

Laphystia kochi Lindner, 1973: 74 (fig. 1 Entire ♀).
http://zoobank.org/F60777CD-C8F2-43E0-9D4C-DAF4EF624495
Laphyctis kochi (Lindner, 1973), Londt 1988: 513.
Prytania albida Oldroyd, 1974: 112 (fig. 105 Entire ♂) **syn. n.**
http://zoobank.org/79557160-03D9-412F-9799-90DD93FF1EEB

Redescription. Based on all available material. General appearance as in Figs 1–10. *Note*: Slight sexual dimorphism occurs in the colour of antennae and legs and pubescence of abdominal tergites.

Head: Dark red-brown, colour masked by strong silver pruinescence, shiny white setose. Antennae mostly dark red-brown, scape red-brown in ♂, dark brown-yellow in ♀, pedicel brown-yellow, postpedicel and stylus dark red-brown, fine silver pruinose. Scape strongly white setose ventrally, pedicel weakly white setose. Postpedicel with fairly narrow terminal cup-shaped stylus with oblique opening and enclosing a seta-like sensory element. Segmental length ratios (scape (as 1) : pedicel : postpedicel : style) – 1 : 0.5 : 2.2 : 0.5. Eye smoothly oval in lateral view, ommatidia of fairly uniform size over entire surface. Face dark red-brown, colour masked by strong silver pruinescence. Width of one eye : face ratio 1 : 1.4 (face clearly wider than eye – Figs 4, 7–8). Face with gently convex profile, projecting weakly at mid height. Mystacal setae numerous (no obvious macrosetae), shiny white, covering most of face although more sparsely dorsally. Frons and vertex dark red-brown, colour masked by shiny silver pruinescence, extensively white setose. Ocellar tubercle weakly protuberant, fine white setose (no obvious macrosetae). Postocular (occipital) region dark red-brown, colour masked by strong silver pruinescence. Occiput with rows of *c.* 15 white macrosetae dorsally behind each eye and many fine, shiny white setae. Palpi dark red-brown, 2-segmented, weakly fine white setose. Proboscis straight, circular in cross-section, shiny dark red-brown, fine white setose proximally and distally.

Thorax: Dark red-brown, uniformly strongly silver pruinose, white setose. Pronotum dark red-brown, silver pruinose, white setose. Mesonotum dark red-brown, entirely silver pruinose, uniformly fine white setose. Dorsocentral setae poorly developed and mostly evident postsuturally. Lateral macrosetae white, 3 npl, 2–3 spal, 2–3 pal. Scutellum dark red-brown, fine silver pruinose (weakly anteriorly and along posterior margin), *c.* 20 fine, white, erect apical scutellar macrosetae. Pleura dark

Figures 1–2. *Prytanomyia kochi* female perching on small, vegetated coastal sand mounds/dunes north of Cape Cross, Namibia (21°43'40"S, 013°58'48"E, see Fig. 18): **1** dorsolateral (Morphbank #860918) **2** (#860920). Photographs: T. Dikow.

Figures 3–4. *Prytanomyia kochi* Lectotype ♀ (SMNS, AAM-007677): **3** lateral **4** head anterodorsal.

red-brown, entirely silvery pruinose, white setose. Katatergal macrosetae, numerous, moderately developed, white. Anatergites uniformly strongly silver pruinose, asetose. Postmetacoxal area membranous. Legs: Coxae dark red-brown, silver pruinose, white setose. Femora, tibiae and tarsi fairly uniformly orange, except for dorsal parts of femora and metathoracic tibiae in ♂ which are commonly partly red-brown, shiny white setose. Claws well developed, black with brown-orange basal parts. Empodium white, straight, slightly shorter than claws. Pulvilli pale yellow, poorly developed, about ½ as long as claws. Wings (Fig. 11): length measured from humeral crossvein to tip, breadth at widest level: Males (10) 3.9 × 1.4 – 5.2 × 2.1 mm (mean 4.6 × 1.7 mm), females (10) 4.6 × 1.7 – 6.9 × 2.6 mm (mean 5.4 × 2.1 mm). Females on average slightly bigger than males. Venation: Marginal cells open (notably r_1) except for m_3 and *cua,* which are closed and stalked. Vein M_3 unusually weakly developed at base (enclosing discal cell d). Veins pale yellow anteroproximally, brown posterodistally, membrane unstained, transparent, lacking microtrichia. Costa (C) apparently

Figures 5–10. *Prytanomyia kochi*: **5** female (USNMENT00832290), dorsal (Morphbank #860900) **6** same, lateral (#860902) **7** same, head anterior (#860904) **8** male (USNMENT00832294) head anterior (#860893) **9** same, dorsal (#860895) **10** same, lateral (#860897). Scale bars: 5 mm.

terminating at junction of veins CuA and CuP with wing margin. Cell *cup* and alula with weak bordering microsetae.

Abdomen: Dark red-brown to black, white setose, silver pruinose. Tergites (♂ with 6 well-developed and clearly evident, others reduced and hidden from view underneath T6; ♀ with 8 visible tergites) dark red-brown to black, white setose, especially laterally, silver pruinose posterolaterally, apruinose anteromedially. T1–6 with white discal macrosetae (progressively diminishing in number from T1 to T6). Sternites red-brown with

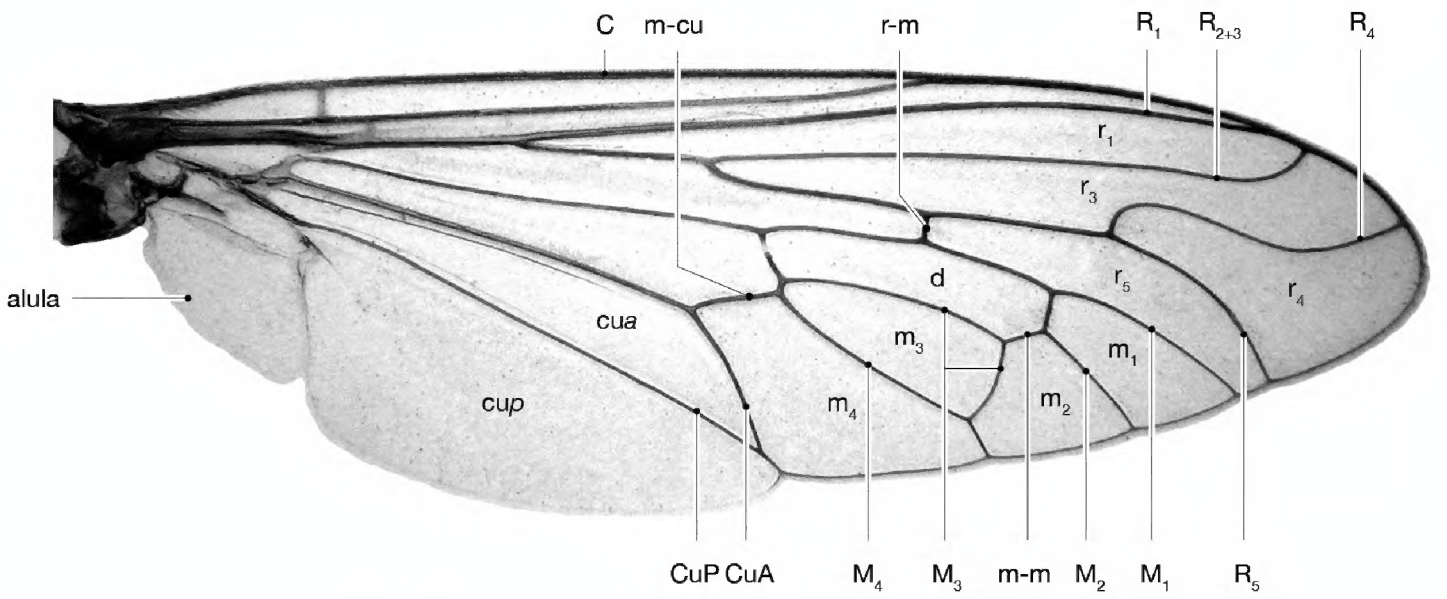
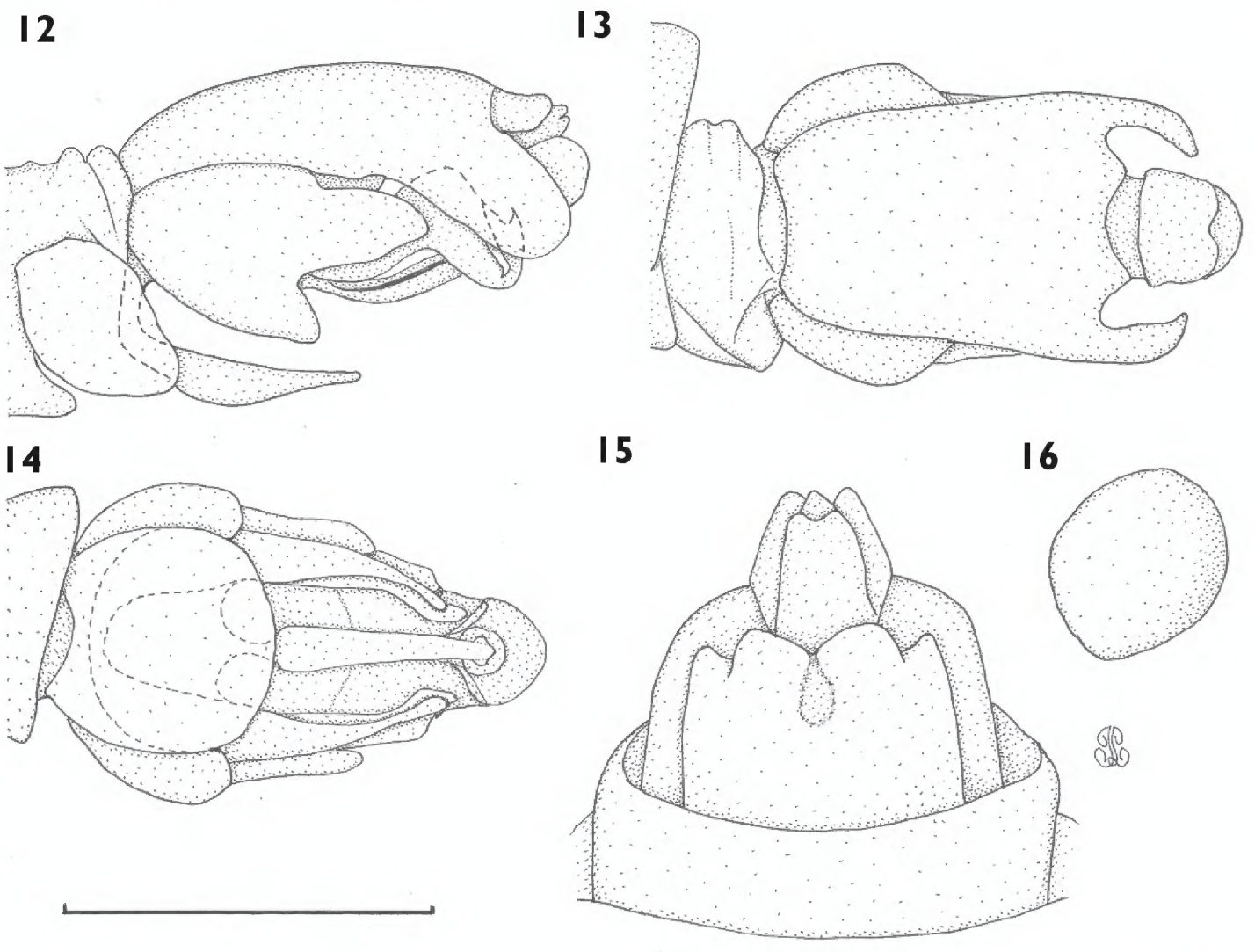


Figure 11. *Prytanomyia kochi* female wing (NMSADIP71708).



Figures 12–16. *Prytanomyia kochi* (Swakop River Mouth) terminalia: **12** male (NMSADIP71694), dorsal **13** same, lateral **14** same, ventral **15** female (NMSADIP08390), ventral **16** egg. Scale bar: 1 mm.

brown-yellow posterior margins, fine white setose, fine dull silver pruinose. ♂ terminalia (Figs 12–14): Genital bulb rotated *c.* 15–45° clockwise or anticlockwise. T7–8 and S7–8 reduced and poorly defined. Epandrium large, in dorsal view almost twice as long as broad and widely bilobed in distal quarter (Fig. 12) and with minor projections either side of base of proctiger. Proctiger short, fairly broad, projecting only slightly beyond distal epandrial margin in dorsal view. Hypandrium in ventral view subcircular (Fig. 14),

poorly defined, almost transparent, margins difficult to appreciate; in lateral view bent at an almost right angle proximally such that it is clearly separated from the gonocoxites (Fig. 12). Gonocoxites well developed, clearly bilobed, broader than epandrium in lateral view (Fig. 12) and more than half as long as epandrium. Gonostyli laterally compressed, subdivided into two lobes, a narrow dorsal lobe with darkly sclerotized ventrally hooked terminal point, and a broad S-shaped ventral lobe with dorsally hooked distal end. Aedeagus with long, gently sinuous distal shaft reaching level of proctiger, tip rounded (details difficult to see). ♀ terminalia (Fig. 15): Relatively broad and somewhat dorsoventrally flattened. Segments 1–6 well developed, segments 7–8 reduced, but clearly evident. Subgenital plate moderately well-developed, broader than long, with undulating, distal margin displaying two pairs of lobes separated by a depressed area. Proctiger with dorsal lamellae wider than ventral lamellae. *Note*: On dissection the abdomen was found to contain a few semi-spherical eggs with a diameter of *c.* 0.5 mm (Fig. 16).

Notes on original descriptions. *Laphystia kochi*: Lindner (1973) studied only three female specimens, one from Gobabeb, and two from Swakopmund (localities well represented by material in the NMSA and USNM). Both were collected in February, as was the NMSA and USNM material. His description, in German, is detailed and agrees in all important ways with that presented above. Interestingly Lindner fails to mention the poorly developed pulvilli although these are evident in his photograph of one of the specimens. Lindner did not designate a holotype and so his specimens must be regarded as syntypes. Lindner named the species for Dr Charles Koch, founder of the Gobabeb Research Station in Namibia, where he collected a specimen.

Prytania albida: Oldroyd's (1974) description is good and there is no doubt that the material available from several museums agrees fully with his types. The type locality is Swakopmund from which many specimens have subsequently been collected.

Type material. Lindner (1973) listed his material of *Laphystia kochi* as '1♀ Gobabeb, SWA, 2–8.II.1970; 2♀ Swakopmund, 29–30.II.1970', but the two specimens from Swakopmund are labelled as having been collected on different days as shown below. As Lindner failed to designate a holotype and in order to preserve stability we hereby designate one of the three female specimens as Lectotype (Figs 3–4). The other two specimens are considered paralectotypes.

Lectotype. NAMIBIA: 1♀ 'Sovakopmund [misspelling of Swakopmund *c.* 22°41'18"S, 14°32'02"E, 10m] SWA. / 29–30.2. 1970 /Lindner leg.' [blue], '*Laphystia* / *kochi* Lind. / Lindner det.' [white], 'Syntype / *Laphystia* / *kochi* Lind. / Det. J. Londt.', 'AAM-007677' (SMNS).

Paralectotypes. NAMIBIA: 1♀ 'Swakopmund / SWA. 31.1.1970 / Lindner leg.' [blue], '*Laphystiella* / *kochi* Lind. / Lindner det.', 'Syntype / *Laphystia* / *kochi* Lind. / Det. J. Londt.', 'AAM-007678' (SMNS); 1♀ 'Gobabeb [*c.* 23°33'47"S, 15°02'25"E 395m] SWA. / 2–9.2.1970 / Lindner leg.' [blue], '*Laphystia* / sp nov. / det H. Oldroyd 1970' [white], '*Laphystia* / *kochi* Lind. / Lindner det.', 'Syntype / *Laphystia* / *kochi* Lind. / Det. J. Londt.', 'AAM-007678' (SMNS).

Other previously recorded material. Types and other specimens of *Prytania albida* Oldroyd, 1974, in the BMNH, are as follows:

Holotype. NAMIBIA: 1♂ 'Holotype', 'S.W. Africa (25), Swakopmund [*c.* 22°41'18"S, 14°32'02"E, 10m], 26–30.i.1972', 'Southern African Exp. B.M. 1972–1', '*Prytania albida* Old. det. H. Oldroyd Holotype', 'NHMUK010292241'.

Paratypes. ANGOLA: 1♀ 'Angola (A15) R. Giraul [*c.* 15°04'43"S, 12°17'28"E, 65m] 10 mls. NE. Mocamedes 27–29.ii.1972', 'Southern African Exp. B.M. 1972–1', 'NHMUK010292263'; 3♀ 'Paratype', 'Angola (A8) 2 mls. S. Mocamedes [= Namibe *c.* 15°10'02"S, 12°09'32"E, 5m] 24–25.ii.1972', 'Southern African Exp. B.M. 1972–1', 'Paratype *Prytania albida* Old. det. J.E. Chainey 1986', 'NHMUK010292251, NHMUK010292256, NHMUK010292259'; 2♂ 2♀ 'Paratype', 'Angola (A10) R. Curoca 7 mls. NE. [*c.* 15°43'52"S, 11°55'27"E, 10m] P. Alexandre 25–26.ii.1972', 'Southern African Exp. B.M. 1972–1', 'Paratype *Prytania albida* Old. det. J.E. Chainey 1986', 'NHMUK010292250, NHMUK010292253, NHMUK010292257, NHMUK010292258'; 2♀ 'Angola (A9) Porto Alexandre [= Tômbua *c.* 15°48'15"S, 11°50'42"E, 10m] 25.ii.1972', 'Southern African Exp. B.M. 1972–1', 'NHMUK010292261, NHMUK010292262'; NAMIBIA: 3♂ 7♀ 'Paratype', 'S.W. Africa (25) Swakopmund [as for holotype] 26–30.i.1972', 'Southern African Exp. B.M. 1972–1', 'Paratype *Prytania albida* Old. det. J.E. Chainey 1986', 'NHMUK010292241–NHMUK010292249, NHMUK010292254–NHMUK010292255'; 1♂ 'Paratype', 'W. Africa (24) Walvis Bay [*c.* 22°57'22"S, 14°30'29"E, 10m] 25–26.i.1972', 'Southern African Exp. B.M. 1972–1', 'Paratype *Prytania albida* Old. det. J.E. Chainey 1986', 'NHMUK010292252'; 1♂ 'S.W. Africa (23) Homeb [*c.* 23°38'12"S, 15°10'55"E, 435m] 10 mls. ESE Gobabeb 23–25.i.1972', 'Southern African Exp. B.M. 1972–1', 'NHMUK010292260'.

Previously unrecorded material examined: NAMIBIA: Erongo: 2♂ 14♀ 'South West Africa 2113Ba / Swakopmund Dist. Ugab / River Mouth [*c.* 21°11'13"S, 13°37'47"E], 8 m. 7.ii.1974 / ME & BJ Irwin, vegetated / sand mounds nr. coast' (♂ NMSADIP08395, NMSADIP71654 ♀ NMSADIP08374, NMSADIP08389, NMSADIP71655–66) (NMSA); 5♂ 15♀ Namib–Skeleton Coast National Park, off C34 N Cape Cross, 21°43'40"S, 013°58'48"E, 3 m, 2012–02-02, coastal vegetated dunes, perching on sand, Dikow, T. (USNMENT00832290–1, USNMENT00832293–5, 00832297–310, USNMENT00832312) (USNM); 4♂ 3♀ Namib-Skeleton Coast National Park, N Omaruru River mouth, 22°05'19"S, 014°15'09"E, 8 m, 2012-02-02, coastal vegetated dunes, perching on sand, Dikow, T. (USNMENT00832311, USNMENT00832313–8) (USNM); 1♂ Swakopmund, 22°41'09"S, 014°31'51"E, 1990-02-12, Schwartz, M. (COGG); 28♂ 27♀ 'South West Africa 2214Da / Swakopmund Dist. Swakop / River Mouth [*c.* 22°41'21"S, 14°31'36"E], 8 m. 9.ii.1974 / ME & BJ Irwin, coastal / and riverbed dunes' (♂ NMSADIP71667–94, ♀ NMSADIP08327, NMSADIP08390, NMSADIP71695–719) (NMSA); 5♂ 7♀ Swakopmund, S side Swakop River mouth, 22°41'33"S, 014°31'37"E, 9 m, 2012-02-03, sandy river bed and vegetated dunes, perching on sand, Dikow, T. (USNMENT00832319–29, USNMENT00832334, USNMENT00832338) (USNM); 1♂ 3♀ B2 Swakopmund-Walvis Bay, 22°44'42"S, 014°31'27"E, 6 m, 2012-02-04, coastal vegetated dunes, perching on sand, Dikow, T. (USNMENT00832331, USNMENT00832335–6, USN-

MENT00832343) (USNM); 6♂ 13♀ 'South West Africa 2214Dc / Swakopmund Dist. 12 km. N. Walvis Bay [*c.* 22°51'43"S, 14°32'35"E], 3 m. 10.ii.1974 / ME & BJ Irwin, vegetated / mounds and dunes' (♂ NMSADIP08397, NMSADIP71720–24, ♀ NMSADIP08329, NMSADIP08380, NMSADIP71725–35) (NMSA); 1♀ Walvis Bay, 22°57'22"S, 014°30'29"E, 1990-02-22, Schwartz, M. (COGG); 5♀ Namibia Walvisbaai [= Walvis Bay], 5 km S (*c.* 23°01'02"S, 014°27'54"E), 5 m / 22.xi.1996, low dunes, M.E. Irwin (INHS-713233–5) (INHS); 1♂ Gobabeb, Namib Desert Research Station, 23°33'37"S, 015°02'26"E, 1983-11-17, Moore, A. (USNMENT00802354, USNM); 1♂ 4♀ 'South West Africa 2315Ca / Namib Desert Park, Kuiseb / River at Gobabeb [*c.* 23°33'47"S, 15°02'25"E]. 400m. / 12.ii.1974, ME & BJ Irwin / Riverine forest and sand' (♂ NMSADIP71736, ♀ NMSADIP08388, NMSADIP71737–9) (NMSA); 1♀ Namib-Naukluft Park, Namib Desert Research Station, Kuiseb River, 23°33'45"S, 015°02'38"E, 420 m, 22.xi.1996, M.E. Irwin (INHS-33542) (INHS); 1♂ 'SWA Kuiseb R. [probably as above] / 9.xii.1976 / AB Cunningham' (NMSAD-IP08400) (NMSA); 1♀ Namib-Skeleton Coast National Park, Gobabeb, Kuiseb riverbed, 23°33'47"S, 015°02'22"E, 396 m, 2012-02-06, perching on sand, Dikow, T. (USNMENT00832344, USNM); 5♀ Namib-Skeleton Coast National Park, Homeb, 23°38'34"S, 015°10'55"E, 445 m, 2012-02-06, dune, perching on sand, Dikow, T. (USNMENT00832332, USNMENT00832337, USNMENT00832340, USNMENT00832342, USNMENT00832346) (USNM); 1♀ Namib-Skeleton Coast National Park, Homeb, Kuiseb riverbed, 23°38'34"S, 015°11'21"E, 430 m, 2012-02-06, perching on sand, Dikow, T. (USNMENT00832341) (USNM); Karas: 6♂ 13♀ 'South West Africa 2615Ca / Lüderitz Dist. Agate / Beach [*c.* 26°36'23"S, 15°10'37"E], 10 km. N. Lüderitz, 3 m. / ME & BJ Irwin. 18.ii.1974 / on coastal vegetated dunes' (♂ NMSADIP71740–5, ♀ NMSADIP08386, NMSADIP71746–57) (NMSA).

Distribution, phenology and biology. The distribution of *Prytanomyia* is illustrated in Fig. 17. With exception of the Gobabeb and Homeb records all can be considered coastal. Gobabeb and Homeb are situated inland on the east side of the Namib desert dunes, but on the banks of the Kuiseb River which eventually runs into the Atlantic ocean at Walvis Bay. At Gobabeb, specimens were caught in the dry Kuiseb riverbed (Fig. 22) by M. Irwin and the junior author (other collecting events lack habitat detail) and this environment is similar to the Swakop and Omaruru river mouths (Figs 19–20) on the coast. The majority of specimens at Homeb though were collected on the large dunes adjacent to the Kuiseb riverbed (Fig. 21, only a single specimen in the dry Kuiseb riverbed), which is quite different from the coastal dunes at river mouths. The small sand mounds (Fig. 18) from which M. Irwin and the junior author collected the species (other coastal collecting events lack habitat detail) are also quite a different habitat from the larger sand deposits or dunes at river mouths. It can be hypothesized that the species will inhabit the Namib dune fields away from the coast that exist between southern Angola and Lüderitz in southern Namibia and of which the internal dunes and intervening valleys have rarely been sampled for insects.

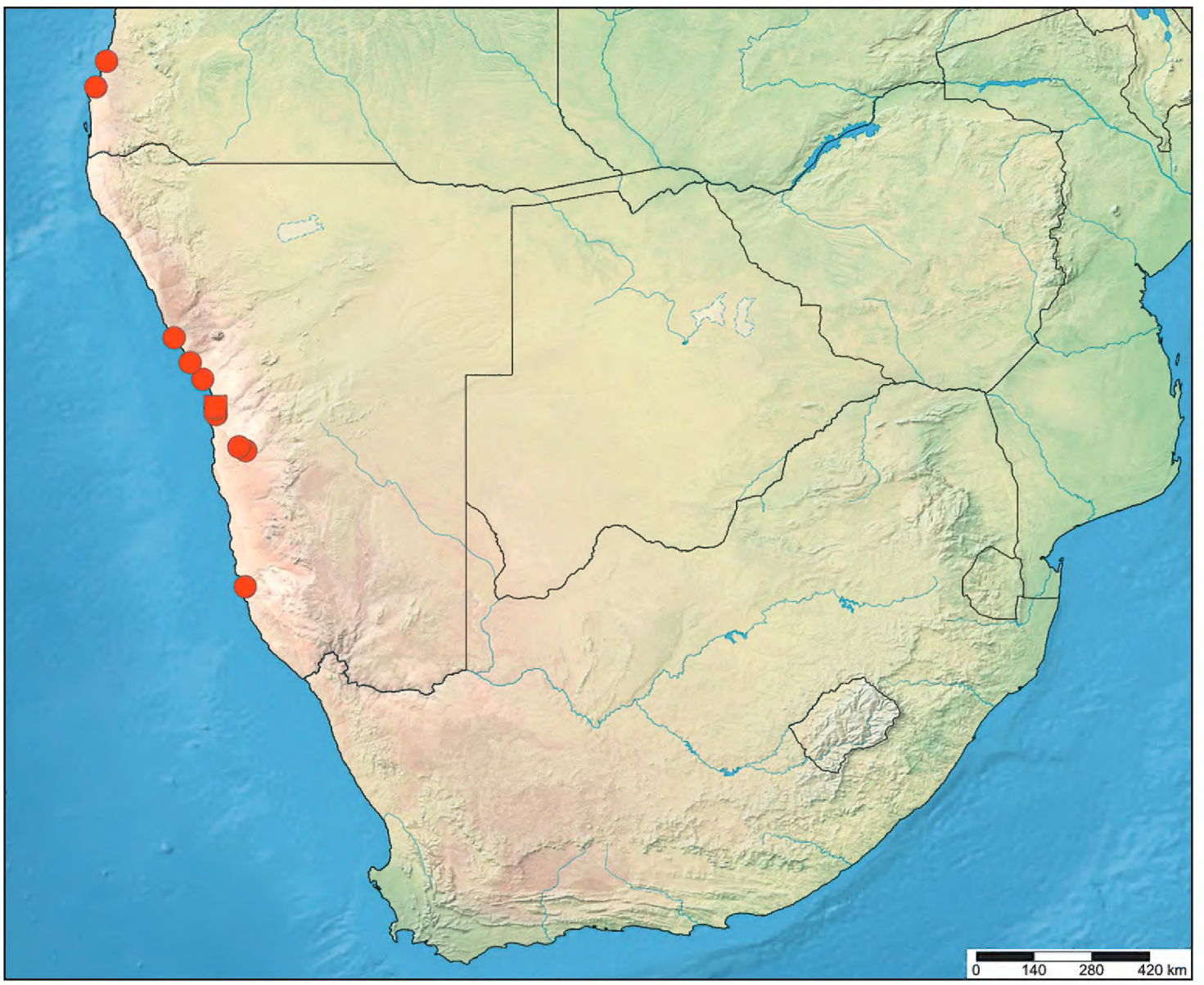


Figure 17. Map of southern Africa with elevational relief and distribution of *Prytanomyia kochi*. Type locality with square symbol (SimpleMappr 7675).

The majority of collecting records are for February (179) with a few records (15) for late January. Eight specimens were collected in mid- to late November (at Gobabeb and south of Walvis Bay) and a single specimen was collected in early December (at Gobabeb). Although the number of specimens included in this study is high (203), most were collected over very limited periods of time as well as only during a few collecting events, and so the species may be active for far longer than presently appreciated. Material bearing information relating to the known habitat of *P. kochi* strongly suggests that these flies are associated with vegetated sand mounds and dunes or sandy, dry, riverbeds (Figs 18–22). The highly reduced pulvilli support this contention and it is predicted that these flies rest almost entirely on sandy surfaces much like other species with poorly developed pulvilli, or entirely lacking these structures (see discussion in Londt and Copeland 2017).

Virtually nothing is known of the biology of *Prytanomyia* and only three prey records are available. Three female specimens are pinned together with their tiny prey – Diptera (2), Hymenoptera (1). Of the 201 recorded specimens, 69 (34%) are males and 132 (66%) females, suggesting a possible imbalance in sexual representation.

Figures 18–22. *Prytanomyia kochi* habitats (all in Namibia): **18** small, vegetated coastal sand mounds/dunes north of Cape Cross (21°43'40"S, 013°58'48"E) **19** coastal river mouth dunes north of Omaruru River mouth (22°05'19"S, 014°15'09"E) **20** coastal river mouth dunes south of Swakop River mouth (22°41'33"S, 014°31'37"E) **21** high dunes at Homeb (23°38'34"S, 015°10'55"E) **22** dry Kuiseb riverbed with adjacent high dunes at Gobabeb (23°33'47"S, 015°02'22"E). Photographs: T. Dikow.

Discussion

Prytanomyia is a distinctive member of the Laphriinae and can be easily placed within this taxon even though it has not been included in the most recent phylogeny of Asilidae by Dikow (2009). It is not immediately recognized as a member of this clade though, in part due to the highly reduced pulvilli, which is quite a unique feature

within Laphriinae although found in *Anypodetus* Hermann, 1908 (Londt 2000) and in other Asilidae such as Leptogastrinae (entirely reduced, Martin 1968), Willistonininae (Londt and Dikow 2016), or Stichopogoninae (Londt and Copeland 2017). This feature is obviously an adaptation for perching on loose sand.

Prytanomyia is one of two Asilidae genera endemic to the Namib desert – the other being the monotypic genus *Ontomyia* Dikow & Londt, 2000 (Stenopogoninae), which is confined to inland areas of the central Namib (Dikow and Londt 2000).

The white to silver appearance of *Prytanomyia kochi* (Figs 1–10) has probably evolved to enable the flies to blend into their exposed habitats such as coastal dunes and sand mounds and dry, sandy riverbeds or inland dunes.

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